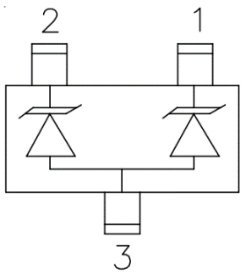
Ultra-Low Capacitance TVS For ESD and CDE Protection

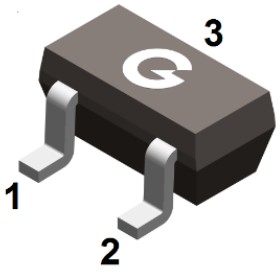
TGESD0502B

Featues

HF

- Designed to Replace Polymer TVS
- Protects Up to Two I/O lines
- Ultra-Low Capacitance (<1pF)
- No Insertion Loss to >3.0GHz
- Low Leakage Current and Clamping Voltage
- Low Operating Voltage: 5.0V
- Solid-state Silicon-avalanche Technology
- Halogen free
- Qualified to AEC-Q101 standards for high reliability
- Transient Protection For High-speed Data Lines to
  IEC 61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
  IEC 61000-4-4 (EFT) 40A (5/50ns)





SOT-523

Typical Applications

- High-Definition Multimedia Interface (HDMI)
- Mobile Display Digital Interface (MDDI)
- USB 2.0 & Firewire Ports

Mechanical Data

- Case: SOT-523
- Molding compound, UL flammability classification rating 94V-0
- Terminals: Tin plated leads, solderable per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping	Marking Code
TGESD0502B	SOT-523	3000 pcs / Tape & Reel	P5

Maximum Ratings (@T_A=25℃ unless otherwise specified)

Characteristic	Symbol	Value	Units
Electrostatic discharge voltage (IEC 61000-4-2 contact discharge) (IEC 61000-4-2 air discharge)	BV_{ESD}	±8 ±15	KV
Peak pulse power dissipation(t_p=8/20μs)	P_{PP}	125	W
Peak pulse current(t_p=8/20μs)	I_{PP}	5	A

Thermal Characteristics

Parameter	Symbol	Value	Units
Junction temperature	T_J	-55 to+125	℃
Storage and operating temperature	T_{STG} T_{amb}	-55 to+150	℃

Electrical Characteristics (@T_A=25℃ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V_{RWM}	Pin 1 or Pin 2 to Pin 3 and Between Pins 1 and 2	-	-	5	V
Reverse Breakdown Voltage	V_{BR}	I_R=1mA Pin 1 or Pin 2 to Pin 3 and Between Pins 1 and 2	6	-	-	V
Reverse Leakage Current	I_R	V_{RWM}=5V Pin 1 or Pin 2 to Pin 3 and Between Pins 1 and 2	-	-	1	uA
Clamping Voltage	V_C	I_{PP} = 1A, tp = 8/20μs Pin 1 to Pin 2	-	-	15	V
		IPP = 5A, tp = 8/20μs Pin 1 or Pin 2 to Pin 3			22	V
		IPP = 5A, tp = 8/20μs Pin 1 to Pin 2			25	V
Diode Capacitance	C_J	V_R=0V, f=1MHz Pin 1 to Pin 2	-	0.6	0.9	pF
		V_R=0V, f=1MHz Pin 1 or Pin 2 to Pin 3	-	-	1.2	

Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

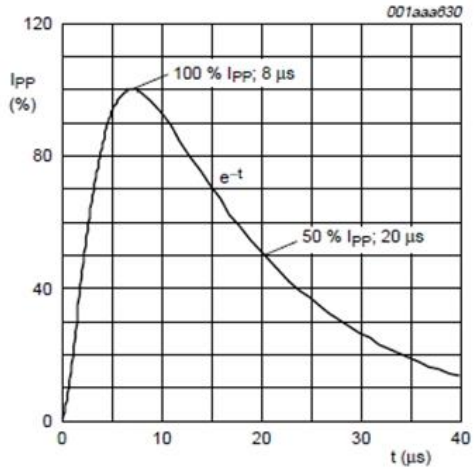


Fig1. 8/20us pulse waveform according to IEC61000-4-5

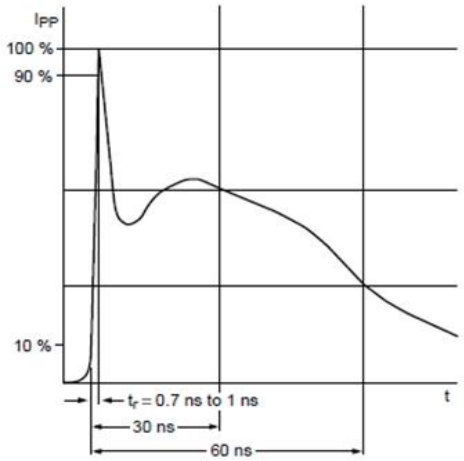


Fig2. ESD pulse waveform according to IEC61000-4-2

Package Outline Dimensions (unit: mm)

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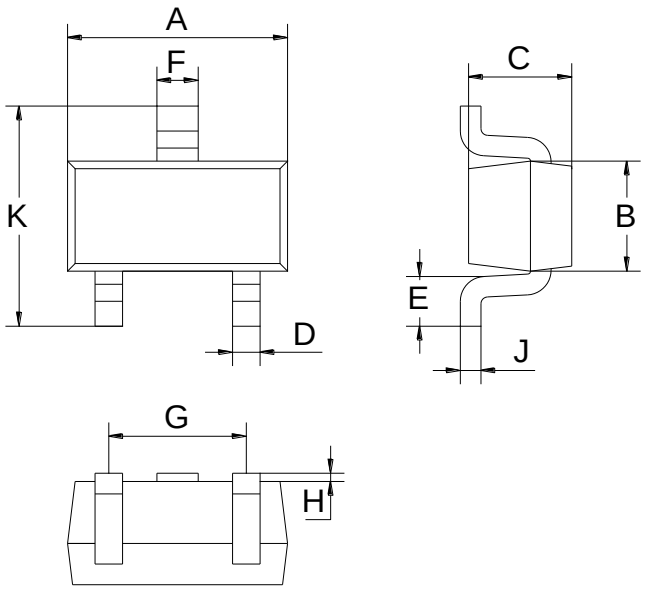

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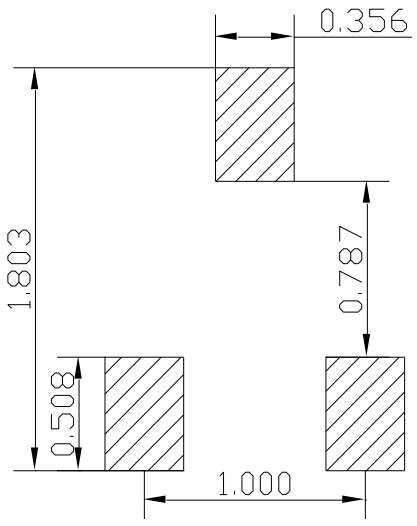
Dim	Min	Max
A	1.50	1.70
B	0.75	0.85
C	0.60	0.80
D	0.15	0.30
E	0.30	0.40
F	0.25	0.40
G	0.90	1.10
H	0.02	0.10
J	0.08	0.18
K	1.45	1.75

Mounting Pad Layout (unit: mm)

SOT-523



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